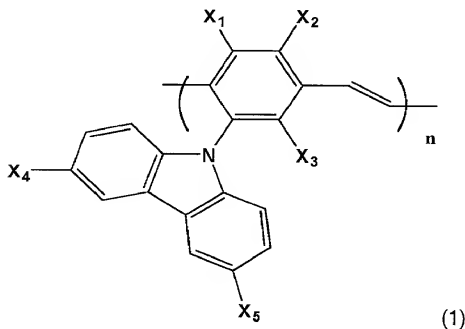


What is claimed is:

1. An electroluminescent polymer, represented by the following formula

(1):

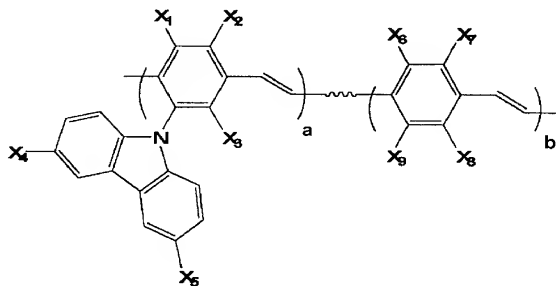


wherein X_1 to X_5 are independently a hydrogen atom, a linear alkyl or alkoxy group having 1 to 40 carbon atoms, a branched alkyl or alkoxy group having 3 to 40 carbon atoms, a cyclic alkyl group having 5 to 40 carbon atoms, a silyl group, or an aromatic group having 6 to 14 carbon atoms which is unsubstituted or substituted with at least one selected from the group consisting of an alkoxy group having 1 to 40 carbon atoms and an amine group.

2. The electroluminescent polymer as defined in claim 1, wherein the number average molecular weight of the electroluminescent polymer is about 10,000-1,000,000, and the molecular weight distribution thereof is about 1.5-5.0.

3. An electroluminescent polymer comprising (a) a PPV-based monomer substituted with a carbazole and an aliphatic alkyl or alkoxy group, and (b) a PPV-

based monomer, the electroluminescent polymer represented by the following formula (3):



(3)

wherein, X_1 to X_9 are independently a hydrogen atom, a linear alkyl or alkoxy group having 1 to 40 carbon atoms, a branched alkyl or alkoxy group having 3 to 40 carbon atoms, a cyclic alkyl group having 5 to 40 carbon atoms, a silyl group substituted with at least one alkyl group having 1 to 40 carbon atoms, or an aromatic group having 6 to 14 carbon atoms which is unsubstituted or substituted with at least one selected from the group consisting of an alkoxy group having 1 to 40 carbon atoms and an amine group, and a and b are numbers such that $0.1 \leq a/(a+b) \leq 0.9$, and wherein at least one of the X substituents is a group other than a hydrogen atom.

4. The electroluminescent polymer as defined in claim 3, wherein the number average molecular weight of the electroluminescent polymer is about 10,000-1,000,000, and the molecular weight distribution thereof is about 1.5-5.0.

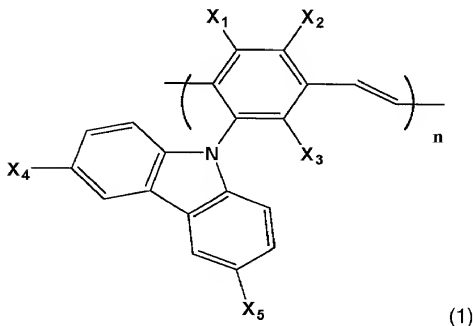
5. The electroluminescent polymer as defined in claim 3, wherein the monomer (b) is selected from the group consisting of 2,5-bis(chloromethyl)-4-

(2'-ethylhexyloxy)anisole and 2,5-bis(chloromethyl)-3',7'-dimethyloctyloxy-4-methoxybenzene.

6. An electroluminescent polymer composition comprising

(a) an electroluminescent polymer, represented by the following formula

(1):



wherein X_1 to X_5 are independently a hydrogen atom, a linear alkyl or alkoxy group having 1 to 40 carbon atoms, a branched alkyl or alkoxy group having 3 to 40 carbon atoms, a cyclic alkyl group having 5 to 40 carbon atoms, a silyl group, or an aromatic group having 6 to 14 carbon atoms which is unsubstituted or substituted with at least one selected from the group consisting of an alkoxy group having 1 to 40 carbon atoms and an amine group, and

(b) a PPV-based polymer,

wherein the electroluminescent polymer (a) and the PPV-based polymer (b) are mixed in a weight ratio of about 1:99-99:1.

7. The electroluminescent polymer composition as defined in claim 6,

wherein the PPV-based polymer (b) is selected from the group consisting of poly(1-methoxy-4-(2'-ethylhexyloxy)-2,5-phenylene vinylene) and poly(1-methoxy-4-(3',7'-dimethyloctyloxy)-2,5-phenylene vinylene).

8. An electroluminescent device having a structure selected from the group consisting of an anode/light emitting layer/cathode, an anode/buffer layer/light emitting layer/cathode, an anode/buffer layer/hole transport layer/light emitting layer/cathode, an anode/buffer layer/hole transport layer/light emitting layer/electron transport layer/cathode, and an anode/buffer layer/hole transport layer/light emitting layer/hole blocking layer/cathode, wherein the light-emitting layer comprises an electroluminescent polymer of claim 1.

9. The device as defined in claim 8, wherein the buffer layer comprises a material selected from the group consisting of polythiophene, polyaniline, polyacetylene, polypyrrole and polyphenylene vinylene derivatives.

10. The device as defined in claim 8, wherein the hole blocking layer comprises LiF or MgF₂.

11. An electroluminescent device having a structure selected from the group consisting of an anode/light emitting layer/cathode, an anode/buffer layer/light emitting layer/cathode, an anode/buffer layer/hole transport layer/light emitting layer/cathode, an anode/buffer layer/hole transport layer/light emitting layer/electron transport layer/cathode, and an anode/buffer layer/hole transport layer/light emitting layer/hole blocking layer/cathode, wherein the light-emitting layer comprises an electroluminescent polymer of claim 3.

1 12. The device as defined in claim 11, wherein the buffer layer comprises
2 a material selected from the group consisting of polythiophene, polyaniline,
3 polyacetylene, polypyrrole and polyphenylene vinylene derivatives.

1 13. The device as defined in claim 11, wherein the hole blocking layer
2 comprises LiF or MgF_2 .

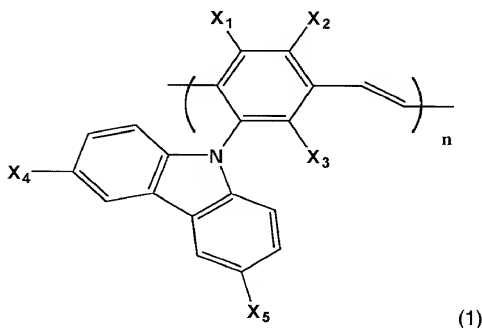
1 14. An electroluminescent device having a structure selected from the
2 group consisting of an anode/light emitting layer/cathode, an anode/buffer
3 layer/light emitting layer/cathode, an anode/buffer layer/hole transport layer/light
4 emitting layer/cathode, an anode/buffer layer/hole transport layer/light emitting
5 layer/electron transport layer/cathode, and an anode/buffer layer/hole transport
6 layer/light emitting layer/hole blocking layer/cathode, wherein the light-emitting
7 layer comprises an electroluminescent polymer composition of claim 6.

1 15. The device as defined in claim 14, wherein the buffer layer
2 comprises a material selected from the group consisting of polythiophene,
3 polyaniline, polyacetylene, polypyrrole and polyphenylene vinylene derivatives.

1 16. The device as defined in claim 14, wherein the hole blocking layer
2 comprises LiF or MgF_2 .

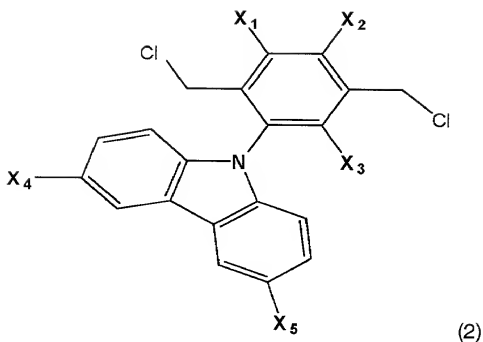
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17. A method of producing an electroluminescent polymer,
represented by the following formula (1):



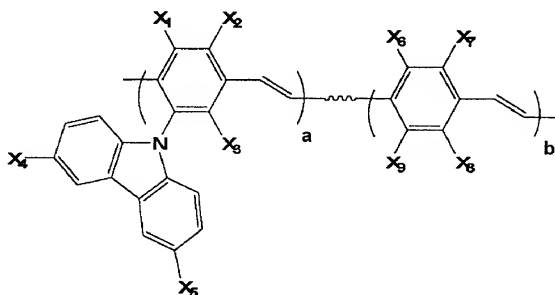
wherein X_1 to X_5 are independently a hydrogen atom, a linear alkyl or alkoxy group having 1 to 40 carbon atoms, a branched alkyl or alkoxy group having 3 to 40 carbon atoms, a cyclic alkyl group having 5 to 40 carbon atoms, a silyl group, or an aromatic group having 6 to 14 carbon atoms which is unsubstituted or substituted with at least one selected from the group consisting of an alkoxy group having 1 to 40 carbon atoms and an amine group,

the method comprising the steps of dehydrohalogenation and 1,6-addition elimination of a carbazole-containing 1,4-bis(chloromethyl)-carbazolyl-benzene represented by the following formula (2), under alkali conditions:



wherein X_1 to X_5 are defined as in the above formula (1).

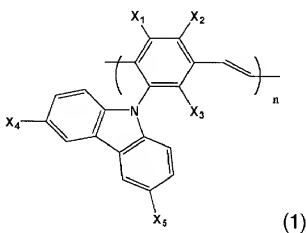
18. A method of producing an electroluminescent copolymer represented by the following formula (3):



wherein, X_1 to X_9 are independently a hydrogen atom, a linear alkyl or alkoxy group having 1 to 40 carbon atoms, a branched alkyl or alkoxy group having 3 to 40 carbon atoms, a cyclic alkyl group having 5 to 40 carbon atoms, a silyl group substituted with at least one alkyl group having 1 to 40 carbon atoms, or an aromatic group having 6 to 14 carbon atoms which is unsubstituted or substituted with at least one selected from the group consisting of an alkoxy group having 1 to

40 carbon atoms and an amine group, and a and b are numbers such that $0.1 \leq a/(a+b) \leq 0.9$, and wherein at least one of the X substituents is a group other than a hydrogen atom,

the method including the step of copolymerizing (a) a monomer unit of an electroluminescent polymer represented by the following formula (1):



wherein X_1 to X_5 are independently a hydrogen atom, a linear alkyl or alkoxy group having 1 to 40 carbon atoms, a branched alkyl or alkoxy group having 3 to 40 carbon atoms, a cyclic alkyl group having 5 to 40 carbon atoms, a silyl group, or an aromatic group having 6 to 14 carbon atoms which is unsubstituted or substituted with at least one selected from the group consisting of an alkoxy group having 1 to 40 carbon atoms and an amine group,

with (b) a PPV-based monomer.